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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/321,594	05/28/1999	ALAN J. DEMERS	50277-313	6698

7590 02/24/2004

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EXAMINER

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ART UNIT	PAPER NUMBER
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2176

DATE MAILED: 02/24/2004

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**Technology Center 2100**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 20

Application Number: 09/321,594  
Filing Date: May 28, 1999  
Appellant(s): DEMERS ET AL.

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Stephen C. Carlson  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed on December 4, 2003.

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**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

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**(7) *Grouping of Claims***

Appellant's brief includes a statement that claims 1-11 and 14-15 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) *Prior Art of Record***

5,999,947

*ZOLLINGER et al.*

12-1999

**(10) *Grounds of Rejection***

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-11 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zollinger et al. (USPN 5,999,947 – filed on 05/1997).**

**Regarding independent claim 1, Zollinger et al. (Zollinger) discloses:**

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A method of propagating changes to a table (on col. 3, lines 1-10: teaches sending table differences to another table) comprising the steps of:

maintaining a first copy of the table at a first site (on col. 3, lines 1-67: teaches copy of a database table at client);

maintaining a second copy of the table at a second site (on col. 3, lines 1-67: teaches copy of a database table at server); and

transmitting changes of the first copy of the table from the first site to the second site (on col. 3, lines 1-67: teaches sending database table differences from copy of the database table at the server to the copy of the database table at client for synchronizing tables);

updating the second copy of the table at the second site based on the transmitted changes (on col. 3, lines 1-67: teaches updating copy of database tables from server to client based on database table differences);

wherein the first copy of the table and the second copy of the table have at least one non-overlapping relational database column (on col. 5, lines 64-66, col. 6, lines 3-25, and col. 10, line 40 – col. 11, line 32: teaches updating database table from server to client by adding a column (database table difference) to the database table of the client, wherein the column in the database table is in a relational database environment).

However, Zollinger does not explicitly disclose “non-overlapping column”.

Zollinger on col. 6, lines 19-25 and col. 10, line 40 – col. 11, line 32: teaches an entire column can be added to a database table changing the structure of the database table.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have incorporated adding an entire column to a database table which will

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change the structure of the database table of Zollinger replacing non-overlapping column in a table in order to efficiently handle the updating process of small database table.

**Regarding dependent claim 2**, Zollinger discloses:

wherein the non-overlapping relational database column is present in the first copy and missing in the second copy (on col. 6, lines 19-25 and col. 10, line 40 – col. 11, line 32: teaches an entire column can be added or deleted (missing) to a database table changing the structure of the database table; the copy of the database table at client can be missing a column and such updating process is needed to synchronize the database table with the copy of the database table at server having the missing column).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have incorporated adding an entire column to a database table which will change the structure of the database table of Zollinger replacing non-overlapping column in a table in order to efficiently handle the updating process of small database table.

**Regarding dependent claim 3**, Zollinger discloses:

wherein the non-overlapping relational database column is missing in the first copy and present in the second copy (on col. 6, lines 19-25 and col. 10, line 40 – col. 11, line 32: teaches an entire column can be added or deleted (missing) to a database table changing the structure of the database table; updates as part of synchronizing the database differences of a client and server copy database tables).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have incorporated adding an entire column to a database table which will

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change the structure of the database table of Zollinger replacing non-overlapping column in a table in order to efficiently handle the updating process of small database table.

**Regarding dependent claim 4**, Zollinger discloses:

comprising the step of reconciling differences in the column shape of the first copy and the column shape of the second copy for the transmitted changes (on col. 3, lines 1-43 and col. 10, line 40 – col. 11, line 32: teaches sending database table differences and updating the copy of the database table at client by adding a column which will change the structure of database table).

**Regarding dependent claim 5**, Zollinger discloses:

comprising the step of defining a top flavor describing overlapping relational database columns and non-overlapping relation database columns of the table (on col. 6, lines 3-40: teaches supersets or collections (flavor) of the updates which may include updating a database table by adding or deleting columns of a database table).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have incorporated adding an entire column to a database table which will change the structure of the database table of Zollinger replacing non-overlapping column in a table in order to efficiently handle the updating process of small database table.

**Regarding dependent claim 6**, Zollinger discloses:

comprising the steps of: defining a first flavor describing the columns of the first copy; and transmitting an indicator of the first flavor from the first site to the second site (on col. 6, lines 3-40: teaches supersets or collections (flavor) of the updates of the database tables).

**Regarding dependent claim 7**, Zollinger discloses:

comprising the steps of : defining a second flavor describing the columns of the second copy and wherein the step of updating the second copy of the table at the second site based on the transmitted changes includes the step of updating columns between the first flavor and the second flavor in the second copy of the table (on col. 6, lines 3-40: teaches supersets or collections (including second flavor) of the updates of the database tables based on the differences of two separate database tables).

**Regarding dependent claim 8, Zollinger discloses:**

the step of maintaining a first copy of the table at a first site includes the step of maintaining an updatable snapshot at a laptop computer site and the step of maintaining a second copy of the table at the second site includes the step of maintaining a master table at a master site (on col. 6, lines 19-40: teaches changes of a database table can be determined by a database table that has been “frozen” so that differences may be measured; on col. 7, lines 28-37: teaches laptop computer)

**Regarding independent claim 9, Zollinger discloses:**

A method of modifying a table to drop a first column and add a second column, said table being replicated at a plurality of sites (on col. 6, lines 19-25 and col. 10, line 40 – col. 11, line 32: teaches columns or records in a database table can be added and deleted and updating these changes of the addition and deletion to another copy of the database table), comprising the steps of:

(a) defining a first flavor for a first site, said first flavor describing the table as having both the first column and the second column (on col. 3, lines 1-67: teaches copy of a database



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tables at client or server and on col. 6, lines 19-40: teaches updates of database tables may be supersets or collections (flavors) of other updates);

(b) adding the second column to the table at the first site, so that the table contains both the first column and the second column (on col. 6, lines 19-25 and col. 10, line 40 – col. 11, line 32: teaches adding column to a database table);

(c) defining a second flavor for a second site, said second flavor describing the table as having the second column but not the first column (on col. 3, lines 1-67: teaches copy of a database tables at the client or server, in which the columns of the client's or server's database table may not have the current updated column and on col. 6, lines 19-40: teaches updates of database tables may be supersets or collections (flavors) of other updates);

(d) dropping the first column and adding the second column to the table at the second site (on col. 6, lines 19-25 and col. 10, line 40 – col. 11, line 32: teaches columns can be added and records in a database table can be deleted and updating these changes of the addition and deletion to another copy of the database table);

(e) defining the second flavor for the first site and dropping the first column from the table at the first site (on col. 6, lines 19-40 and col. 10, line 40 – col. 11, line 32: teaches deletion of records from a database table); and

(f) maintaining replication activities while performing steps (a), (b), (c), (d), and (e) (on col. 3, lines 1-67: teaches synchronization process between two database table at the client and at the server).

However, Zollinger does not explicitly disclose “dropping the first column”.

Zollinger on col. 6, lines 19-25 and col. 10, line 40 – col. 11, line 32: teaches changing the state of a database, such as additions, deletions, or modification of records and which changes may include adding an extra field or column to a database table, in other words, if changes such as deleting records or adding columns to a database table is done, deletion of a column containing such records can also be done.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have incorporated deletions of records in a database in which records can be in columns in a database table of Zollinger replacing dropping a column which is desirable and not limited for allowing distribution of changes to various client copies of database table so that the client copies may be current with the original.

**Regarding dependent claim 10, Zollinger discloses:**

transmitting changes to the table from the first site to the second site; and updating the second copy of the table at the second site based on overlapping columns between the first flavor and the second flavor (on col. 3, lines 1-43 and col. 10, line 40 – col. 11, line 32: teaches sending database table differences and updating the copy of the database table at client changing the structure of database table).

**Regarding independent claim 11, Zollinger discloses:**

A method of propagating changes to a data container (on col. 3, lines 1-10: teaches sending table differences to another table), comprising the steps of:

maintaining a first copy of the data container at a first site; (on col. 3, lines 1-67: teaches copy of a database table at client);

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maintaining a second copy of the data container at a second site (on col. 3, lines 1-67: teaches copy of a database table at server); and

transmitting changes to the first copy of the data container from the first site to the second site (on col. 3, lines 1-67: teaches sending database table differences from copy of the database table at the server to the copy of the database table at client for synchronizing tables);

updating the second copy of the data container at the second site based on the transmitted changes (on col. 3, lines 1-67: teaches updating copy of database tables from server to client based on database table differences);

wherein the first copy of the data container and the second copy of the data container have at least one non-overlapping data field (on col. 5, lines 64-66, col. 6, lines 3-25, and col. 10, line 40 – col. 11, line 32: teaches updating database table from server to client by the addition of an extra field or column (database table difference) to the database table of the client).

However, Zollinger does not explicitly disclose “non-overlapping data field”.

Zollinger on col. 6, lines 19-25 and col. 10, line 40 – col. 11, line 32: teaches an extra field or column can be added to a database table changing the structure of the database table.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have incorporated adding field or column to a database table which will change the structure of the database table of Zollinger replacing non-overlapping field in a table in order to efficiently handle the updating process of small database table.

**Regarding dependent claim 14**, Zollinger discloses:

wherein the first copy of the table and second copy of the table have at least one non-overlapping relational database column after said updating (on col. 10, line 40 – col. 11, line 32,

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see figures 2A and 2D: teaches the title column has been added into the table of figure 2D); Figures 2A and 2D shows the differences after update from the addition of a new column in figure 2D (non-overlapping columns between tables)).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have incorporated adding an entire column to a database table which will change the structure of the database table of Zollinger replacing non-overlapping column in a table in order to efficiently handle the updating process of small database table.

**Regarding dependent claim 15**, Zollinger discloses:

wherein the first copy of the container and second copy of the container have at least one non-overlapping relational database field after said updating (on col. 10, line 40 – col. 11, line 32, see figures 2A and 2B: teaches the field of Mr. Mauss has been added into the table of Figure 2B; Figures 2A and 2B shows the differences after updating from the addition of a new field in figure 2B (non-overlapping field)).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have incorporated adding field or column to a database table which will change the structure of the database table of Zollinger replacing non-overlapping field in a table in order to efficiently handle the updating process of small database table.

**(11) Response to Argument**

A. “Dependent claims 14-15 are patentable over Zollinger et al. because Zollinger et al. fails to teach that the first and second copies have at least one non-overlapping column or data field after updating the second copy”.

Regarding Appellant remarks on page 4, 1<sup>st</sup> paragraph – page 5, 1<sup>st</sup> paragraph and page 6, 3<sup>rd</sup> paragraph:

The Examiner respectfully disagrees. Although Zollinger does not specifically disclose “non-overlapping column”, it is obvious that Zollinger can have “an entire column added to a database table changing the structure of the database table” compared with another database table to determine differences of columns (See Figure 2A and 2D shows differences of the addition of the “Title column” of table 2D compared with table 2A).

Zollinger does teach “at least one non-overlapping database column [or ‘data field’] after said updating”, on col. 10, line 40 – col. 11, line 32, see figures 2A and 2D: updates to tables of are created one after another referred to as “update sequence” (also see col. 6, lines 26-33). The current table will receive “database change event” such as an “addition of a column” until a second update is created. In other words, a column is added into the current table; after updating; another update creation of a “database change event” is performed. Every time an update creation is performed in the current table, the other table will have a different table structure until the update sequence is completed. Therefore, Zollinger's system does have the capability of “adding more columns after updating”.

It is noted that “after” could apply to any time “after said updating” up to the end of time. Thus, the “first” and “second copy” could have a “non-overlapping relational database column” long after, and not necessarily in response to “said updating”. In other words, the claim does not set forth any cause and effect relationship between the updating and the existence of a “non-overlapping database column”.

B. “Claims 1-8 and 14 are not rendered obvious by Zollinger et al. because Zollinger et al. fails to teach “transmitting changes to the first copy of the table,” which has “at least one non-overlapping relational database column” with a second copy of the table”.

Regarding Appellant remarks on page 7, 3<sup>rd</sup> paragraph – page 8, 3<sup>rd</sup> paragraph:

The Examiner respectfully disagrees. Zollinger does teach “transmitting changes to the first copy of the table”, on col. 3, lines 1-67: teaches sending database table differences from copy of the database table at the server to the copy of the database table at client for synchronizing tables. Furthermore, Zollinger on col. 11, lines 1-12 teaches the current table receives “database change events” until another update creation or another update sequence is initiated.

Although Zollinger does not specifically teach “non-overlapping relational database column with a second copy of the table”, it is obvious that Zollinger can have “an entire column added to a database table changing the structure of the database table” compared with another database table to determine differences of columns (See Figure 2A and 2D shows differences of the addition of the “Title column” of table 2D compared with table 2A).

C. “Claims 11 and 15 are non-obvious by Zollinger et al. fails to teach “transmitting changes to the first copy of the data container” which has “at least one non-overlapping data field” with a second copy of the table.”

Regarding Appellant remarks on page 9:

The Examiner respectfully disagrees. The Examiner introduces Zollinger teaching, “transmitting changes to the first copy of the data container” and “at least one non-overlapping

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data field” with a second copy of the table” (See A. and B., above). Furthermore, Zollinger on col. 6, lines 19-25 teaches “database change event” is anything that changes the state of a database, which may include adding an extra field or column to a database table.

D. “Claims 9-10 are not rendered obvious by Zollinger et al., because Zollinger et al. fails to teach “maintaining replication activities” while “dropping the first column and adding the second column.”

Regarding Appellant remarks on page 10 – page 11, 1<sup>st</sup> paragraph:

The Examiner respectfully disagrees. Zollinger does teach “maintaining replication activities”, on col. 3, lines 1-67: teaches synchronization process between two database table at the client and at the server. Furthermore, “replication” as known in the art is the process of copying a database or (parts of it) to another database in order for two database systems to remain synchronized. Zollinger does disclose this “replication process” by sending database table differences to another database table in order to synchronize the two database tables (see col. 1, lines 9-19 and col. 3, lines 1-10).

Although Zollinger does not specifically teach “dropping the first column”, it is obvious for Zollinger’s system perform additions and deletions of records and also perform adding an extra field or column to a database table (see col. 6, lines 19-25). Therefore, Zollinger’s system does have the capability for “dropping” (deleting) a column from a database table to synchronize the two database tables.

E. “Claims 5-7 are patentable over Zollinger et al. because Zollinger et al. has not teaching of “defining a top flavor describing overlapping relational database columns and non-overlapping relational database columns of the table.”

Regarding Appellant remarks on page 11:

The Examiner respectfully disagrees. The Examiner introduced Zollinger for fairly suggesting “non-overlapping columns” (See A, above). Zollinger does teach “defining a top flavor describing overlapping relational database columns and non-overlapping relational database of the table”, on col. 6, lines 3-40 teaches supersets or collections (flavor) of the updates and the differences that may exist in more that one updating depending on profile; wherein the updates may include updates of a database table for adding or deleting columns of a database table (also see col. 10, line 40 – col. 11, line 32 teaches an update sequence is the process of creating updates after another update until the update sequence is completed; wherein the update can include adding a column to a table based on the state change of the tables of Figures 2A and 2D).

Furthermore, Zollinger’s invention does have the capability of updating only parts of a table such as columns instead of copying the current table to the reference table (see col. 3, lines 31-43 teaches the updates isolate only the information that has changed over time so that a minimum amount of data may be sent to a client and also see col. 11, lines 20-21 teaches it could be more efficient to simply copy the table down to the client rather than *send instructions for updating the table*).



F. “Claims 7 and 10 are not rendered obvious by Zollinger et al. because Zollinger et al. does not teach “maintaining replication activities” while dropping the first column and adding the second column.”

Regarding Appellant remarks on page 12:

The Examiner respectfully disagrees. The Examiner introduced Zollinger for teaching “maintaining replication activities” and “dropping the first column and adding the second column.” (see D, above).

Zollinger does teach “updating overlapping columns”, on col. 3, lines 1-43 and col. 10, line 40 – col. 11, line 32 teaches sending database table differences and updating the copy of the database table at client changing the structure of database table and further see Figures 2B and 2C shows table 2B contains the columns Name, Letter Greeting, Employee Number and Marital Status which are the same columns (overlap) as table 2C.

Furthermore, the Examiner introduced Zollinger for teaching “flavors” for updating columns in a table (See E, above).

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

  
**JOSEPH FEILD**  
**SUPERVISORY PATENT EXAMINER**

Almari Yuan  
February 17, 2004

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